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GENERAL NOTES

Hypothetical Parallaxes of Double Stars.—The November 1920 number of the *Monthly Notices* contains an important article by Messrs. J. Jackson and H. H. Furner of the Royal Observatory, Greenwich on "The Hypothetical Parallaxes of 556 Visual Double Stars, with a Determination of the Velocity and Direction of the Solar Motion." Several recent investigators* have found that the average visual binary star system for which we have good elements and a reliable value of the parallax has about twice the mass of our own Sun. If we adopt this mass value for all binary star systems we can reverse the process and find the "hypothetical" parallax of any double star for which orbits have been computed or even (as Russell and Hertzsprung have shown) for those in which but a short arc of the orbit has been observed, provided this suffices for a fair determination of the ratio between the cube of the semi-major axis and the square of the period of revolution.

This is what Jackson and Furner have done for 556 systems, for 124 of which orbit elements were available. Comparing their values of the parallaxes of 94 of these stars with the parallaxes determined by other means, they find that, on the whole, the hypothetical parallaxes are a little too small, especially for the nearer stars. Since they also find that these nearer stars contain a large majority of the later type stars the inference is that binary stars of late spectral type (G, K, M) are less massive than the average.

The proper motions of 327 of these systems are also known, and in combination with the hypothetical parallaxes they supply the data for a determination of the velocity and direction of the solar motion thru space. The results are in good agreement with those obtained from different and more extensive data by Campbell, Boss and others and thus support the assumption made at the beginning as to the average mass of a binary star system. "The separate stars are about equal to our own Sun."

The Pons-Winnecke Comet.—A number of extravagant statements have been made in some of our newspapers about the return of this comet to its perihelion point in June of the present year. At this point, the comet's orbit is not very far from that portion of Earth's orbit thru which we pass in the same month. The two bodies will

*See, for example, the notes by Aitken and by van Maanen and Sanford in these PUBLICATIONS 31, 196 and 231, 1919.

therefore probably be very near each other for a few days and it is possible that we may witness a meteoric display about June 27th or 28th, the meteors being cometary *debris* drawn down upon the Earth by its attractive force. A meteoric shower witnessed in England on June 28, 1916, by Mr. Denning was attributed by him to fragments following in the orbit of this same comet, tho the comet itself had passed the point of perihelion in September, 1915.

For these reasons Dr. Crommelin, of the Royal Observatory, Greenwich, England, has urged the desirability of detecting the comet at the earliest possible date to permit the computation of an accurate ephemeris for its motion in June. The Pons-Winnecke comet has a revolution period of about 5.8 years and belongs to the well-known *Jupiter* comet family. Since its last return, in 1915, it has made an unusually close approach to the planet *Jupiter* and the precise effect this may have had in "perturbing" the orbit is not known. Just how close it will come to the Earth we are consequently unable to say, but it is well to remember that to the astronomer an approach to within 2 or 3 million miles will be a very close one, and it is highly improbable that the comet will pass us at a much smaller distance. The most sensational result we may hope for is a shower of meteors similar to the display of the August Perseids or the November Leonids.

Measures of Double Stars on Parallax Plates.—In Part II of Volume III of the *Publications of the Leander McCormick Observatory*, Professor C. P. Olivier publishes a fine series of measures of double stars found on the parallax plates taken at that observatory. These measures indicate that on the average parallax plate secured with the 26-inch telescope, any double star as bright as the 11th magnitude and with angular separation as great as 3" can be measured if the two components do not differ more than two magnitudes in brightness; and that, if the components are nearly equal, pairs as close as 1".5 or even 1".0 can be measured. Olivier also finds that his measures give no indications of systematic errors.

It is to be hoped that he will continue this work and that similar measures may be made of the double stars on parallax plates taken at other observatories. Measures connecting independent stars with one or both components of a binary system in which orbital motion has been observed will be of special value since they will, in time, lead to the determination of the relative masses of the components of the binary.

The Gold Medal of the Royal Astronomical Society has been awarded to Dr. Henry Norris Russell, professor of astronomy and director of the observatory at Princeton University in recognition of his important contributions to the problem of stellar evolution. Professor Russell has gone to England to receive the award in person. Upon his return to the United States he will spend the year at the Mount Wilson Observatory as Research Associate of the Carnegie Institution of Washington.

Dr. Harlow Shapley of the Mount Wilson Observatory has been granted a year's leave of absence, and has accepted the appointment as Observer in the Harvard College Observatory. Dr. Shapley entered upon his new duties at Cambridge early in March.

The Actonian prize of the Royal Institution of Great Britain has been awarded to Dr. George E. Hale, director of the Mount Wilson Observatory, in recognition of his great achievements in the field of solar research. This medal is awarded once in seven years for work in any branch of science. Among the earlier medalists we note the names of Sir William and Lady Huggins in 1900, and Madame Curie, in 1907.

The French Academy of Sciences has announced the award of the following prizes in the field of astronomical research: The Lalande prize to M. Leopold Schulhof, formerly of the Bureau des Longitudes, for his revision of the important catalog of the proper motions of 2641 stars published by J. Bossert in 1896. The Valz prize to M. Ernest Maubant of the Paris Observatory, for his work on the perturbations of the Tempel-Swift comet. The Janssen Medal to Dr. William W. Coblentz, physicist of the Bureau of Standards, Washington, D. C., for his work on the infra-red rays from terrestrial and stellar sources. The Pierre Guzman prize to MM. Gonnessiat, Jarry-Desloges and Lagrula, for their researches on the planets of the solar system.

The death of Mary Watson Whitney, professor of astronomy emeritus, and from 1889 to 1910 director of the observatory of Vassar College, occurred on January 20th. Miss Whitney, like her predecessor Maria Mitchell, will be remembered as one of the pioneer women astronomers.

The death is announced of Dr. Wilhelm Foerster, professor of astronomy at the University of Berlin, and at one time director of the Observatory of this institution.

We regret to have to record also the death, on February 23rd, of Alfred Doolittle, professor of astronomy at the Catholic University of Washington, D. C.